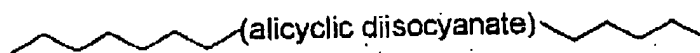




(a) Present Invention

Urethane Molecule



(b) Ichikawa Reference

Urethane Molecule



(alicyclic diisocyanate)



Another Uretane Molecule

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of :

Takashi SASAKI et al: :

Serial No. 09/987,469 :

Filed November 14, 2001 :

GOLF BALL :

**DECLARATION**

I, Toshiyuki TARAO, residing in 3-3-50, Yamamoto-higashi,  
Takarazuka-shi, Hyogo-ken, Japan, declare and say as follows:

1. I am one of co-researchers working with the inventors of the present application.
2. In 2005, I graduated from Graduate School in Osaka University and received a Doctor's degree in Engineering from said University.
3. Since 2005 to the present time, I have been employed by SRI Sports, Limited. as a researcher. I have been engaged in researching materials for golf balls. I have enough technical knowledge about materials for golf balls.
4. With respect to the above-identified application, some experiments were carried out under my direction and supervision, and I beg to submit herewith the exact report thereon.

### Experiments 1 and 2

#### Preparation of cover compositions

The formulations showed in Table 1 (Experiments 1 and 2) were mixed using a kneading type twin-screw extruder to obtain a pelletized cover compositions. In order to confirm Examples and Comparative Examples of the present invention, Examples 1 and 2 and Comparative Examples were also conducted again, as shown in Table 1. The extrusion condition was,

a screw diameter of 45 mm,

a screw speed of 200 rpm,

a screw L/D of 35.

The formulations were heated at 200 to 260°C at the die position of the extruder. The resulting cover composition was applied to a rubber core A which was prepared in the present application to form a golf ball. The golf balls were subjected to evaluation of scuff resistance and discoloration and the results are shown in Table 1.

#### Scuff resistance

A pitching wedge commercially available was mounted on a swing robot manufactured by True Temper Co., a golf ball was hit by the wedge at a head speed of 36 m/sec at one point and was then hit by the same condition at another point. The two points were evaluated by checking the surface appearance by visual observation. The evaluation criteria are as follows.

**Evaluation criteria**

o : The surface of the golf ball slightly has a cut, but it is not particularly noticeable.

Δ : The surface of the golf ball clearly has a cut, and the surface becomes fluffy.

x : The surface of the golf ball is considerably chipped off, and the surface noticeably becomes fluffy.

**Discoloration**

The resulting golf ball was put in a sunshine weather meter manufactured by Suga Test Instruments Co., Ltd. to conduct an accelerated exposure test. If discoloration does not occur at all, the result of "excellent" is shown in Table 1.

Table 1

Cover Composition		Iohikawa		Prenat Invention		
		Experiment 1	Experiment 2	Example 1	Example 2	Comparative Example 2
Pandex T7298	thermoplastic polyurethane elastomer of aliphatic isocyanate	75	50			
Pandex TR3080	thermoplastic polyurethane elastomer of aliphatic isocyanate	25	50			
Desmodur W	dicyclohexylmethane-4,4'-diisocyanate	1.5	1.5			
Elastollan XNY90A	thermoplastic polyurethane elastomer of dicyclohexylmethane-4,4'-diisocyanate			100		
Elastollan XNY97A	thermoplastic polyurethane elastomer of dicyclohexylmethane-4,4'-diisocyanate				100	
Pandex T7890	thermoplastic polyurethane elastomer of hexamethylene diisocyanate					100
Scuff resistance		Δ	Δ	○	○	Δ
Discoloration		Excellent	Excellent	Excellent	Excellent	Excellent

Conclusion

As is clearly shown in Table 1, the cover prepared by the method of the Ichikawa reference shows not excellent scuff resistance in comparison with the cover of the present invention. The cover of the Ichikawa reference has crosslinking bond between polyurethane molecules but shows poor scuff resistance. In the present invention, however, the cover shows excellent scuff resistance without modification of urethane molecule. The present invention controls easily the preparation of cover composition, because no chemical reaction between urethane molecule and specific diisocyanate occurs.

5. It is declared by undersigned that all statements made herein of undersigned's own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S. Code 1001 and that such willful false statements may be jeopardize the validity of this application or any patent issuing thereon.

  
Toshiyuki TARAO

Dated this 29<sup>th</sup> day of May, 2007